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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,143

01/19/2006

Norman Yang

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8087

23455 7590 04/02/2009
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EXAMINER

BULLOCK, IN SUK C

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,143	Applicant(s) YANG ET AL.	
	Examiner IN SUK BULLOCK	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/4/2009 has been entered.

Disposition of Claims

Amendment filed 2/13/2009, which was denied entry under an Advisory Action, has been entered. Thus, claims 1-10 and 12-15 currently remain pending in this application.

The following is a new ground of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,767,334 to Nissfolk et al. (hereinafter "Nissfolk") in view of EP 0742191 (relying on equivalent US Patent 6,075,174 to Presedo, hereinafter "Presedo").

Nissfolk discloses a process for removing catalyst from an olefinic oligomerization product comprising:

Oligomerizing one or more olefins (such as 1-decene) by continuously charging fresh and recycled monomer with recycled catalyst complex (BF₃-cocatalyst complex) and BF₃ to provide an excess of BF₃ in a CSTR to produce a product consisting of

unreacted monomer, oligomers, free and dissolved BF_3 and catalyst complex (col. 1, lines 5-11 and col. 2, lines 15-30);

Sending the product to a distillation column to produce an overhead consisting of free BF_3 , catalyst complex and monomer (col. 3, lines 28-31; col. 4, lines 35-36);and

Condensing the distillate vapor to separate the catalyst complex from the monomer phase and an uncondensable BF_3 gas is trapped in a vacuum system wherein the trapped BF_3 and cocatalyst are reacted to form BF_3 cocatalyst complex (col. 4, lines 37-44).

Nissfolk fails to explicitly disclose the claimed "mixing the oligomerization reaction mixture with an organic constituent ... to yield a crude PAO product ...". However, this claimed step is read as a two-step process wherein two reactors are used in series. It is noted that Nissfolk discloses conducting the oligomerization process in two or more CSTRs in series (col. 1, lines 61-63 and col. 3, lines 16-17).

Nissfolk fails to disclose using a condenser column for the recombination of uncomplexed cocatalyst and BF_3 and the particulars of the condenser column.

Presedo discloses a process for recovering BF_3 from a crude PAO product comprising (a) stripping the heated crude PAO/catalyst mixture in a stripping column having packing or trays to produce an overhead comprising BF_3 and promoter which are uncomplexed, (b) contacting the thermal cracking gas with a cold, liquid olefin stream which contains promoter in an absorber/direct-contact condensation column having internals such as trays or packing to enhance contact between the two phases (abstract; col. 1, line 60 to col. 2, line 60; and col. 4, line 26 to col. 5, line 19). Presedo

further discloses a vacuum pump may also be used for the absorption/condensation step (col. 5, lines 31-34).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the process of Nissfolk by employing any means for recombining of uncomplexed cocatalyst and BF_3 including the claimed condenser column in view of Presedo's disclosure of using either a condenser column or a vacuum pump with the expectation of achieving equal success, absent any showing of unexpected results.

With regard to the materials used for the internal structure of the condenser column, it would have been obvious to select materials which can be effective for processing BF_3 , including the claimed materials, i.e., stainless steel.

Response to Arguments

Applicants' arguments filed 2/13/2009 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IN SUK BULLOCK whose telephone number is (571)272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/In Suk Bullock/
Examiner, Art Unit 1797